**Supplementary table I: Selected MeSH and GO terms related to gut functions.**

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| **Gut functions** | **Related GO terms** | **Related MESH terms** |
| 1) Transport / transit ingested material | * + GO:0120054 intestinal motility   + GO:0035482 gastric motility   + GO:0043133 hindgut contraction   + GO:0030432 peristalsis   + GO:0014831 gastro-intestinal system smooth muscle contraction   + GO:0030421 defecation | * + Constipation D003248   + Vomiting D014839   + Bile Reflux D001655   + Laryngopharyngeal Reflux D057045   + Flatulence D005414   + Abdominal Pain D015746   + Diarrhea D003967   + Nausea D009325   + Eructation D004884   + Gagging D005683   + Heartburn D006356 |
| 2) Extracellular digestion ingested material | * + GO:0007586 digestion   + GO:0050892 intestinal absorption   + GO:0006113 fermentation (NB. Related to microbe-derived products such as lactate) | * + Dyspepsia D004415   + Malabsorption Syndromes D008286   + Malnutrition D044342 |
| 3) Intracellular digestion and metabolism | * + GO:0005764 lysosome (too broad)   + GO:0044237 cellular metabolic process (too broad) | * + Dyspepsia D004415   + Malabsorption Syndromes D008286   + Malnutrition D044342 |
| 4) Excretion Into gut lumen | NO GO terms identified | NO CTD terms identified |
| 5) Supply essential nutrients | * + GO:0030277 maintenance of gastrointestinal epithelium   + GO:0005911 cell-cell junction   + GO:0050892 intestinal absorption | * + Diarrhea D003967   + Malnutrition D044342   + Water-Electrolyte Imbalance D014883 |
| 6) Protection from injurious or allergenic material | * + GO:0030277 maintenance of gastrointestinal epithelium   + GO:0005911 cell-cell junction   + GO:0070254 mucus secretion   + GO:0046541 saliva secretion | * + Hypersensitivity, Immediate D006969   + Bacterial Infections and mycosis D001423   + Virus diseases D014777   + Parasitic diseases D010272   + Gastroenteritis D005759   + Diarrhea D003967   + Vomiting D014839 |